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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Masaru MIYAMOTO et al.

Serial No.: 09/297,399 Group Art Unit: 1714

Filed: April 29, 1999 Examiner: C. E. SHOSHO

For: WATER BASED INK COMPOSITION FOR BALLPOINT PEN

CLAIMS PENDING WITH JUNE 3, 2002 AMENDMENT UNDER 37 C.F.R. §1.111

Assistant Commissioner for
Patents
Washington, DC 20231

June 3, 2002

Sir:

The following claims, including amendments, are pending in the above-identified application.

1. (Four Times Amended) A water based ink composition for a ballpoint pen which comprises a thickener which is associative and swells in an alkaline medium, said thickener comprising a polymer having a carboxyl group and a hydrophobic group selected from the group consisting of a linear hydrocarbon, a non-aromatic cyclic hydrocarbon, an halogenated alkyl, an organosilicon group, and a fluorinated carbon group, a pigment, a polar solvent comprising water and other water-miscible solvents and a pH controlling agent.

2. (Amended) The water based ink composition for a ballpoint pen as described in claim 1, wherein the thickener is contained in a proportion of 0.1 to 8% by weight based on the ink composition and dissolves and swells in the polar solvent to associate with the particle surface of the pigment, thereby increasing the ink viscosity.

3. The water based ink composition for a ballpoint pen as described in claim 2, wherein the pigment particles are subjected to surface treatment with a pigment surface-treating agent.

4. The water based ink composition for a ballpoint pen as described in claim 3, wherein the pigment surface-treating agent is a water soluble polymer and/or a surfactant.

5. The water based ink composition of claim 1, wherein said thickener is present in the amount of 0.1 to 2.0% by weight based on the ink composition.

6. (Amended) The water based ink composition for a ballpoint pen of claim 1 wherein the hydrophobic group is a non-aromatic cyclic hydrocarbon.

7. The water based ink composition for a ballpoint pen of claim 1 wherein the hydrophobic group is an halogenated alkyl.

8. The water based ink composition for a ballpoint pen of claim 1 wherein the hydrophobic group is an organosilicon group.

9. The water based ink composition for a ballpoint pen of claim 1 wherein the hydrophobic group is a fluorinated carbon group.

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